

## First Virginia Records for Ten Species of Carabidae (Coleoptera)

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The ten species of Carabidae discussed below are new to the list of species occurring in Virginia. Three of them (*Bembidion tetracolum* Say, *Helluomorphoides nigripennis* [Dejean], and *Colliuris ludoviciana* [Sallé]) are recorded from Virginia in the fine new catalogue of Geadephaga of America north of Mexico (Bousquet & Laroche, 1993). No specific localities are given in that work, but the records are based on the specimens included in this paper. Seven other species — *Piesmus submarginatus* (Say), *Cyclotrachelus incisus* (LeConte), *Calleida viridipennis* (Say), *Zuphium americanum* Dejean, *Pseudaptinus lecontei* (Dejean), *Thalpius dorsalis* (Brullé), and *Thalpius pygmaeus* (Dejean) — are recorded from Virginia for the first time. The specimens examined are housed in the following institutions, abbreviated as indicated: Canadian National Collection (CNC), Carnegie Museum of Natural History (CMNH), and Virginia Museum of Natural History (VMNH).

### *Bembidion (Peryphus) tetracolum* Say

VIRGINIA. Appomattox County: Bent Creek, VII.18.1980, André Laroche (5, CMNH and CNC).

This Palearctic species ranges from Europe to western Siberia and south as far as North Africa (Lindroth, 1945). It was introduced into North America before 1823 (Bousquet, 1992) in both eastern and western Canada (Spence, 1990). It is now nearly transcontinental in the north and ranges south as far as North Carolina, Tennessee and Texas (Bousquet & Laroche, 1993). The five Virginia specimens were identified by me and verified by Yves Bousquet, and the record in Bousquet & Laroche (1993) is based on these specimens. Lindroth (1945) describes the habitat in Europe as humid, loamy soil, somewhat shaded, often near water, and in disturbed places such as barns, stables and outhouses. In North

America (Lindroth, 1963), it is usually found on damp clayish soil with scattered weeds, mostly in cultivated fields and areas disturbed by man. I have collected this species frequently, and my notes on habitat agree with those of Lindroth.

### *Piesmus submarginatus* (Say)

VIRGINIA. Dickenson County: Breaks Interstate Park, drift fence (pitfall), Site 2, 1780 feet, 22 August-6 October 1991, Virginia Museum of Natural History Survey (1 female, VMNH).

This species has previously been reported throughout the southeastern United States east of the Mississippi as far north as North Carolina and Kentucky (Bousquet & Laroche, 1993). It has also been reported from Mexico (Blackwelder, 1944; Erwin et al., 1977), but was not included by Ball & Roughley (1982) in their work on Mexican Pterostichini. This is the first record from Virginia. The West Virginia record in Bousquet & Laroche (1993) is based on a single male collected by Robert E. Acciavatti near Jacksonburg, Wetzel County, not far from the southwest corner of Pennsylvania. I have seen also a couple of specimens from south central Ohio. The species occurs much farther north than was previously known and will probably turn up in Maryland and Pennsylvania. Its presence in Illinois was considered doubtful by Bousquet & Laroche (1993), but its occurrence in northern West Virginia and southern Ohio suggests it may well be in Illinois, probably near the Ohio River. The Virginia specimen was taken on a relatively dry, east-facing slope of white oak and magnolia with an understory of *Kalmia latifolia* (Richard Hoffman, personal communication). The West Virginia specimen was collected in a moist forested ravine bottom with oak on one slope and beech and maple on the other

(Robert E. Acciavatti, personal communication). Kirk (1969) mentions specimens from South Carolina collected in December and January under dead sweet gum bark and in a dead stump.

*Cyclotrachelus incisus* (LeConte)

VIRGINIA. Dickenson County: Breaks Interstate Park, drift fence (pitfall), Site 2, 1780 feet, Virginia Museum of Natural History Survey, 30 June-17 July 1991 (1 male, VMNH); 17 July-6 August 1991 (1 male, CMNH); 22 August-6 October 1991 (1 male, VMNH).

This species occurs in the midwest from Arkansas and Oklahoma to Illinois and South Dakota (Freitag, 1969; Bousquet & Laroche, 1993). Its presence in Virginia is something of an enigma, and it is possible that the eastern specimens represent a vicar species in the *C. incisus* group. Freitag (1969) saw specimens from Allegheny County, Pennsylvania, but considered the records doubtful. The Carnegie Museum has eight old specimens from Pittsburgh and Allegheny County that were presumed to be mislabelled and one from La Porte, Indiana, that was also considered dubious. Casey (1918) described *Anaferonia fausta* from Pennsylvania, and this name is currently listed as a synonym of *C. incisus*. It now seems that perhaps these records are real, especially as Bousquet & Laroche (1993) record the species from Kentucky and it has now turned up in the far west of Virginia.

I examined the male genitalia of all three Virginia specimens, a specimen from southern Illinois, two specimens from Nebraska, and a specimen ostensibly from Pittsburgh. Comparing Virginia with Nebraska, the genitalia in Virginia specimens are larger (but the beetles are a little larger), more abruptly bent, with the deflections on each side of the apex longer and thicker. The Illinois specimen seems to be intermediate in all three respects. Each of these specimens has a very short right paramere. The aedeagus of the Pittsburgh specimen is nearly identical to the Virginia specimens (large, more abruptly bent, stronger apical deflections), but the right paramere is noticeably longer. All specimens have similar internal sclerites in the internal sacs and the same depression and hump in the apical two-thirds of the aedeagi. I think it is best to consider these differences as variations in local populations of *C. incisus*, at least for the present. Collecting in Ohio and eastern Kentucky may turn up intermediate specimens, or it may show that

the gap in range between western and eastern populations is real and not merely an artifact of poor collecting. If the eastern populations are eventually recognized as specifically distinct, it is probable that a name is already available (*Cyclotrachelus faustus* [Casey], mentioned above).

The Virginia specimens were collected in the same habitat as the specimen of *Piesmus submarginatus* mentioned above. Freitag (1969) collected specimens in moist leaf litter in deciduous forest in Arkansas.

*Colliuris (Calocolliuris) ludoviciana* (Sallé)

VIRGINIA: Westmoreland County, Oak Grove, VII. 14.1980, André Laroche (15, CMNH, CNC and VMNH).

This species occurs from New York and New Jersey to Florida and Alabama (Bousquet & Laroche, 1993), so its discovery in Virginia is no surprise. The Virginia record in Bousquet & Laroche is based on these specimens. I have collected this species in Florida by treading grasses and carices at the edge of *Typha* patches.

*Calleida viridipennis* (Say)

VIRGINIA. Amherst County: Lynchburg Reservoir near Oronoco, 7 March 1993, R. L. Hoffman (1 male, VMNH). Chesterfield County: 1 mi/1.6 km W jct US 360 and Va 653, 6 March 1994, S. M. Roble (1 male, VMNH). City of Virginia Beach: Seashore State Park, by cypress pond, 9 January 1990, Kurt A. Buhlmann (1 male, VMNH). Fairfax County: Herndon (1 male, CMNH); Springfield, R. D. Ward, 18-19 April 1976 (1 female, CMNH), 25 April 1976 (1 female, CMNH). Greensville County: 1 mi/1.6 km NE Claresville, 9 May 1993, VMNH Survey, uv light (1 female, VMNH). Roanoke County: Back Creek distr., 2 May 1993, M. W. Donahue (1 male, VMNH).

This species occurs throughout the eastern United States north to New York and Illinois, west to Texas and Arkansas (Bousquet & Laroche, 1993). These are the first Virginia records. I have collected it only at lights and do not know its true habitat, but it is presumably on trees and vegetation like several other *Calleida*. Kirk (1969) records it from South Carolina under dead pine bark.

*Zuphium americanum* Dejean

VIRGINIA. Isle of Wight County: 7 km S Zuni, Blackwater Ecological Preserve, pine barrens site, 1 July 1994, S. M. Roble (1, VMNH).

This species has not previously been recorded from Virginia, though it was known from Maryland and North Carolina and is therefore no surprise. It occurs from New Jersey to Florida, west to Oregon and Arizona (Bousquet & Laroche, 1993). I have collected it only at lights. Kirk (1969) records it from South Carolina in "Jan.-Feb., in hollow tree." According to Reichardt (1977:448), zuphiines "apparently live in humus." It is interesting to note that no Zuphiini had yet been recorded from Virginia. This and the following three species document the occurrence in Virginia of the tribe and all three North American genera.

*Pseudaptinus lecontei* (Dejean)

VIRGINIA. City of Virginia Beach: Seashore State Park, mesic pitfall site, 26 July 1989, Virginia Division of Natural Heritage survey (1, VMNH); Dam Neck Naval Base, interdunal swale, drift fence site, 14 May 1991, Virginia Museum of Natural History survey (1, VMNH).

This species is known from all the coastal states from North Carolina to Florida to Texas, and also from Arkansas (Bousquet & Laroche, 1993). These are the first Virginia records for the species and the genus, and they extend the known range significantly northward along the coast. Most specimens have been taken at lights.

*Thalpius dorsalis* (Brullé)

VIRGINIA. Lunenburg County: Juniper Creek, Virginia Highway 690 at bridge, 10 August 1988, R. L. Hoffman, u-v light (1, VMNH).

This species has been recorded from Arkansas, Texas, Louisiana, Florida and the District of Columbia (Bousquet & Laroche, 1993). It undoubtedly occurs in all the southeastern coastal states, but its distribution at present remains poorly documented. This is the first Virginia record for the species and the genus. Most specimens have been taken at lights.

*Thalpius pygmaeus* (Dejean)

VIRGINIA. Isle of Wight County: 7 km S Zuni, Blackwater Ecological Preserve, pine barrens site, 1 July 1994, S. M. Roble, Virginia Division of Natural Heritage survey (2, VMNH).

This species has been recorded from the coastal states from Georgia to Louisiana, and also in Arkansas (Bousquet & Laroche, 1993). This is the first Virginia record for the species, and it represents a northward extension of at least 380 mi/600 km of the known range. Most specimens have been taken at lights.

*Helluomorphoides nigripennis* (Dejean)

VIRGINIA. City of Virginia Beach: Seashore State Park, Kurt Buhlmann, 19 May 1989 (3, VMNH), 7 June 1989 (1, VMNH), 21 June 1989 (8, VMNH), 18 August 1989 (6, VMNH), 5 February 1990 (1, VMNH), 22 May 1990 (1, VMNH). Prince William County: Manassas, 23 April 1981, Reed (1, VMNH). York County: Grafton Ponds, Kurt Buhlmann, 11 June 1990 (2, VMNH), 14 June 1990 (1, VMNH), 14 May 1991 (1, VMNH), 27 May 1991 (2, VMNH), 25 June 1991 (1, VMNH).

Some of the earlier records above were sent to Bousquet by Dr. Hoffman, and the Virginia record in Bousquet & Laroche (1993) is based on these specimens. The species occurs in most of the coastal states from Massachusetts to Texas (Bousquet & Laroche, 1993). Kirk (1969) records it from "woods trash" and "broomsedge." Nothing seems to be known about *H. nigripennis* directly, but its behavior is presumably similar to the few species of *Helluomorphoides* that have been studied. Topoff (1969) studied *H. latitarsis* and *H. ferrugineus*, and Plsek et al. (1969) studied *H. texanus*. These species are known to search at night and follow chemical trails of ants, or to accompany migrating or foraging columns of ants. They are known to prey on ant larvae and pupae.

Bousquet & Laroche (1993) record 446 carabids from the state of Virginia, including *Bembidion tetracolum* Say, *Colliuris ludoviciana* (Sallé) and *Helluomorphoides nigripennis* (Dejean). The addition of seven state records published herein brings the documented carabid fauna of Virginia up to 453 species.

## ACKNOWLEDGMENTS

I am grateful to Richard L. Hoffman for his efforts in scouring Virginia as part of a survey of the state's Carabidae, for sending me problematic Carabidae for determination and for encouraging me to write up these notes. I am grateful also to André Larochelle for asking me to study some 20,000 carabids which he collected in the eastern United States and Canada (including several thousand from Virginia) to augment records in the manuscript of the Catalogue of the Geadephaga of America North of Mexico (now published). I thank Yves Bousquet for verifying the determination of the specimens of *Bembidion tetracolum*. I also thank Bousquet and Larochelle for their fine catalogue. Without it, our knowledge of nomenclature and distribution of Nearctic Carabidae would be even more woefully inadequate, and these notes would not have been possible.

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